Statistics for December and 2012 - is the UK getting wetter?

Provisional statistics from the Met Office show 2012 was the second wettest year in the UK national record dating back to 1910, and just a few millimetres short of the record set in 2000.

The exceptionally wet year was characterised by a dry start which quickly gave way to very wet weather, with April and June both being the wettest on record.

Unsettled weather continued through to the end of the year, with December being the 8th wettest on record for the UK.

Throughout the year, accurate forecasts and warnings from the Met Office have helped everyone across the UK plan and prepare for the worst impacts of the extremely wet weather we have seen.

The persistent wet weather resulted in total 2012 rainfall for the UK of 1330.7 mm, which is just 6.6 mm short of the record set in 2000.

Looking at individual countries, 2012 was the wettest year on record for England, third wettest for Wales, 17th wettest for Scotland and 40th wettest for Northern Ireland.

This adds to a high frequency of wet years since 2000 in the UK - with four of the top five wettest years occurring since then.

Top five wettest years in the UK	
1	2000 1337.3 mm
2	2012 1330.7 mm
3	1954 1309.1 mm
4	2008 1295.0 mm
5	2002 1283.7 mm

We have always seen a great deal of variability in UK rainfall because our weather patterns are constantly changing. However, preliminary evidence suggests we are getting slightly more rain in total and it may be falling in more intense bursts.

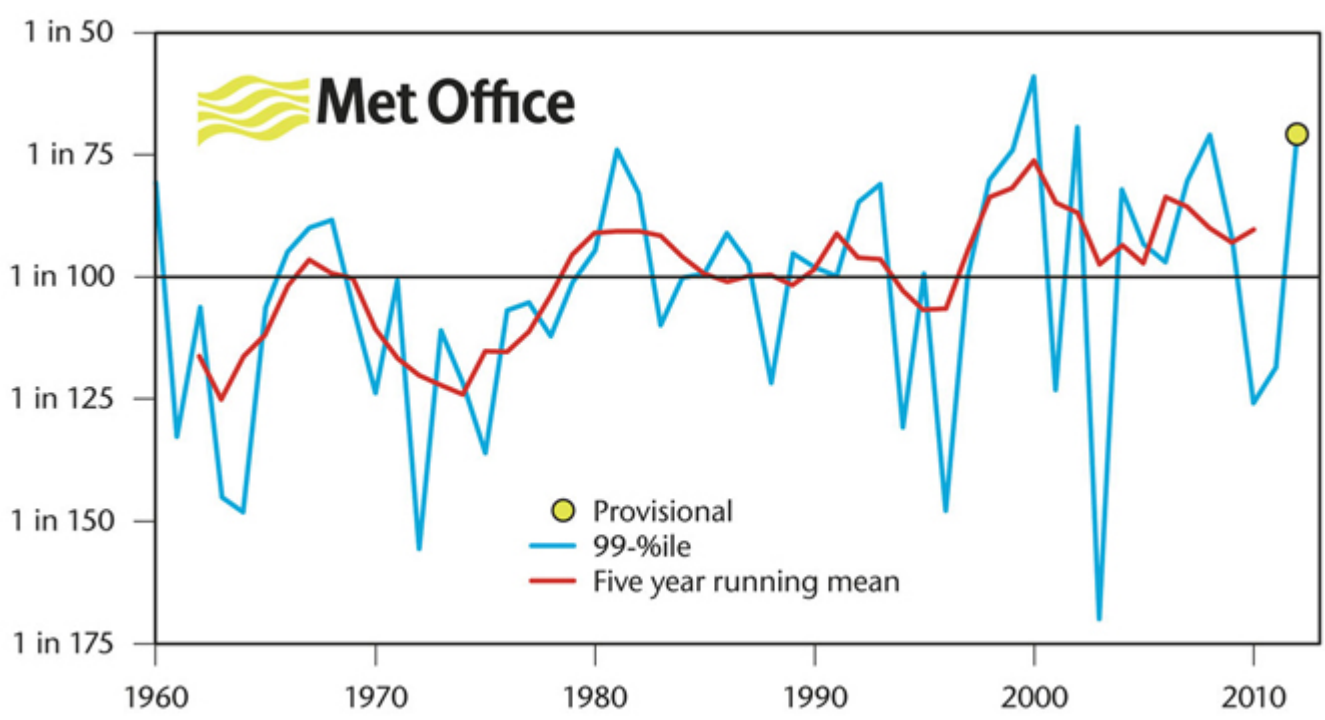
Looking at annual rainfall for the UK, we can see the country as a whole getting wetter in recent decades.

Long-term averages of 30-year periods show an increase in annual rainfall of about 5% from 1961-1990 to 1981-2010:

Annual average UK rainfall according to 30-year averages	
1961-1990	1100.6 mm
1971-2000	1126.1 mm
1981-2010	1154.0 mm

Preliminary research from the Met Office also suggests we may have seen a change in the nature of the rain we get, with 'extreme' daily rainfall becoming more frequent.

An analysis of 1 in 100 day rainfall events since 1960 indicates these 'extreme' days of rainfall may have become more frequent over time.



The above graphic shows the frequency of what climate averages tell us should be roughly 1 in 100 day heavy rainfall events in each year. Over time, this gives a view of the frequency of 'extreme' rainfall.

Professor Julia Slingo, Chief Scientist at the Met Office, said: "The trend towards more extreme rainfall events is one we are seeing around the world, in countries such as India and China, and now potentially here in the UK. Much more research is needed to understand more about the causes and potential implications.

"It's essential we look at how this may impact our rainfall patterns going forward over the next decade and beyond, so we can advise on the frequency of extreme weather in the future and the potential for more surface and river flooding. This will help inform decision-making about the need for future resilience both here in the UK and globally."

Changes in sea surface temperatures due to natural cycles and reducing amounts of Arctic sea-ice could be influencing the increase in rainfall, but more research needs to be done before anyone can establish how big a role they play.

Increasing global temperatures may be another factor. A warmer atmosphere can hold more moisture and we have seen an increase of about 0.7 °C in global temperatures since pre-industrial times.

From basic physics, this would equate to about a 4% increase in moisture in the atmosphere which means there is a greater potential for heavy rain.

2012 provisional stats

	Mean temperature (°C)		Sunshine duration (Hours)		Precipitation (mm)	
	Actual	Difference from 1981-2010 average	Actual	% of 1981-2010 average	Actual	% of 1981-2010 average
Regions						
UK	8.8	-0.1	1356.4	99	1330.7	115
England	9.6	-0.1	1470.2	98	1123.2	131
Wales	9.1	0.0	1355.7	97	1716.2	118
Scotland	7.3	-0.1	1187.6	100	1602.6	102
N Ireland	8.9	0.0	1239.1	99	1153.7	102
England & Wales	9.5	-0.1	1454.4	98	1205.0	128
England N	8.8	-0.1	1360.0	99	1288.1	133
England S	10	-0.1	1528.5	98	1036.0	130
Districts						
Scotland N	6.9	-0.2	1124.9	104	1599.5	93
Scotland E	7.1	-0.1	1217.1	96	1313.2	111
Scotland W	8.1	0.0	1239.1	99	1917.1	107
Eng E & NE	8.8	-0.1	1420.3	100	1064.0	137
Eng NW & Wales N	8.8	-0.1	1305.0	97	1614.1	122
Midlands	9.4	-0.1	1439.2	100	1074.6	135
East Anglia	10.1	-0.1	1538.1	98	804.1	129
Eng SW & Wales S	9.8	-0.1	1457.3	96	1574.0	125
Eng SE & Central S	10.3	-0.1	1601.5	98	999.7	127

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